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TI COPPER ALLOY MATERIAL FOR ELECTRIC AND ELECTRONIC EQUIPMENT
IN KURITA TOSHIHIRO; ITO HISATOSHI
PA MITSUBISHI ELECTRIC CORP
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SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993
AB PURPOSE: To obtain a copper alloy for electric and electronic equipment excellent in formability, corrosion resistance, heat resistance and contact resistance by applying Ni plating on the surface of a copper alloy, thereafter diffusing Ni into the copper alloy by heat treatment or furthermore plating its surface with Au, Sn or the like.
CONSTITUTION: The surface of a contact and terminal material made of various copper alloys is plated with Ni at 0.01 to 0.5 μ m thickness. After that, it is subjected to heat treatment in an atmosphere of a reducing gas mixed with a nitrogen gas and a hydrogen gas, e.g., at 450°C for 1hr to diffuse the Ni plated layer into the copper alloy and to alloy the Ni. By the alloying of the Ni-plated layer, cracking and peeling are not generated at the time of forming such as press working, so that excellent workability can be obtd. Moreover, at the time of plating the surface of the Cu alloy finished with the Ni plating diffusing treatment with Au, Sn, solder or the like, by the presence of the Ni plating diffusing layer, the atomic diffusion of the plated layer such as Au into the Cu alloy can be prevented, the secular degradation of the Au plated layer or the like can be prevented and its contact resistance value can always be held to low one.
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